

Notice of Allowability

Application No.

10/645,694

Examiner

Jason M. Repko

Applicant(s)

GREEN, ROBIN J.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 12/5/2006.
2. ☒ The allowed claim(s) is/are 1-9, 11-13, 26-29 and 36-40.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In paragraph [0001] on page 1 of the descriptive portion of the specification in section "CROSS REFERENCE TO RELATED APPLICATION," replace the underscore and attorney docket number with the U.S. patent application serial number:

This application is related to U.S. patent application Ser. No. 10/645,819 _____
(~~Attorney Docket No. SONYP024/SCEA02019US00~~), filed on the same day as the instant application and entitled "METHOD AND APPARATUS FOR REAL TIME GLOBAL ILLUMINATION INCORPORATING STREAM PROCESSOR BASED HYBRID RAY TRACING," which is incorporated herein by reference for all purposes.

2. The following is an examiner's statement of reasons for allowance:

3. Peter-Pike Sloan, Jan Kautz, John Snyder, "Precomputed Radiance Transfer for Real-Time Rendering in Dynamic, Low-Frequency Lighting Environments," July 23, 2002, ACM Transactions on Graphics, Vol. 21, No. 3, p. 527-536 (Sloan et al) teaches "a method for rendering an object associated with an image with high resolution lighting characteristics (*Figs. 1 and 2 show rendering an object with high resolution lighting characteristics*), comprising:

a. generating a texture map associated with the image, the texture map defined by texels" (*3rd paragraph of section 6*); "calculating a value representing a lighting

characteristic for each of the texels" (*2nd paragraph of section 4.1*); "storing the value" (*3rd paragraph of section 6*).

4. Sloan et al does not teach the aforementioned features in combination with "determining a direct illumination transfer function through a biased approximator for a point of the object in real time; and determining a secondary lighting contribution in real time, the secondary lighting contribution identified through a series of multiply and add operation, resulting in coefficients that represent surface reflectance," as recited in independent claims 1, 8, 26, and 36. Sloan et al teaches a preprocessing step for computing radiance transfer and not in real-time during a video presentation. A system similar to the one described in Sloan et al is disclosed in U.S. Patent Application Publication No. 2003/0179197 to Sloan et al. P. Cignoni, C. Montani, R. Scopigno, C. Rocchini, "A General Method for Preserving Attribute Values on Simplified Meshes," October 1998, Proceedings of the conference on Visualization 1998, p. 59-66 (Cignoni et al.) teaches "defining an image associated with a first resolution," as in claim 4, and "the image on the display screen is associated with a second resolution, the second resolution being less than the first resolution" as in claims 6 and 11 (*5th paragraph of section 1*), but does not disclose these limitations in combination with those recited in independent claims 1, 8, 26, and 36. Jonathan Cohen, Marc Olano, Dinesh Manocha, "Appearance-Preserving Simplification," July 1998, Proceedings of the 25th Annual Conference on Computer Graphics and Interactive Techniques, p. 115-122 teaches texture mapping simplified meshes, but does not disclose these limitations in combination with those recited in independent claims 1, 8, 26, and 36.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Repko whose telephone number is 571-272-8624. The examiner can normally be reached on Monday through Friday 8:30 am -5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMR


ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER